What is claimed is:

1. An eccentric thrust bearing assembly comprising: a first radially outside member and a first radially inside member positioned on a radially inner side of the first radially outside member; and a second radially outside member and a second radially inside member positioned on a radially inner side of the second radially outside member, the second radially outside and inside members disposed in opposing relation with the first radially outside and inside members,

wherein the first radially outside member opposes the second radially inside member at three or more first positions separately located along a circumferential direction thereby clamping rolling elements therebetween, the rolling elements disposed at the first positions, whereas the second radially outside member opposes the first radially inside member at three or more second positions separately located along the circumferential direction and having a different phase from that of the first positions, thereby clamping rolling elements therebetween, the rolling elements disposed at the second positions,

wherein the first radially outside member and the first radially inside member define a gap therebetween so as to be allowed to move relative to each other in the radial direction and the circumferential direction, whereas the second radially outside member and the second radially inside member define a

gap therebetween so as to be allowed to move relative to each other in the radial direction and the circumferential direction,

wherein the first radially outside member and the second radially outside member are integrally interconnected, whereas the first radially inside member and the second radially inside member are integrally interconnected, and

wherein respective certain portions of the rolling elements are present on the same plane.

2. An eccentric thrust bearing assembly according to Claim 1, wherein all the rolling elements have their centers positioned on the same plane.

3. An eccentric thrust bearing assembly according to Claim 1, wherein the first radially outside member includes: outer races separately provided at the respective first positions separately located; and a first radially outside case to which all these outer races are mounted,

wherein the second radially outside member includes: outer races separately provided at the respective second positions separately located; and a second radially outside case to which all these outer races are mounted,

wherein the first radially inside member includes: inner races separately provided at the respective first positions separately located; and a first radially inside case to which all these inner races are mounted,

wherein the second radially inside member includes:

inner races separately provided at the respective second positions separately located; and a second radially inside case to which all these inner races are mounted, and

wherein the rolling element is clamped between the outer race and the inner race.

4. An eccentric thrust bearing assembly according to Claim 1, wherein a relatively movable range between the radially outside member and the radially inside member, which is provided by the gap, substantially corresponds to a movable range of the rolling element.

5. An eccentric thrust bearing assembly according to Claim 1, wherein the respective groups of the first positions and the second positions are disposed at N places (N indicating an integer of 3 or more) with equal spacing,

wherein the first and second radially outside cases have the same configuration, which includes: an outside ring portion defining an outer periphery of the bearing assembly; and N inward tongues projected radially inwardly from the outside ring portion as positioned at regular circumferential space intervals,

wherein the first and second radially inside cases have the same configuration, which includes: an inside ring portion defining an inner periphery of the bearing assembly; and N outward tongues projected radially outwardly from the inside ring portion as positioned at regular circumferential space intervals,

wherein all the outward tongues have the inner races mounted thereto and aligned on the same circle, whereas all the inward tongues have the outer races mounted thereto and aligned on the same circle, all the inner and outer races comprising disk-like members of the same configuration, and

wherein the first positions and the second positions are alternately located on the same circle at 360/(2N)° circumferential phase shift relative to one another.

6. An eccentric thrust bearing assembly according to Claim 1, further comprising first cage guides surrounding the respective races.

7. An eccentric thrust bearing assembly according to Claim 1, further comprising a single second cage guide for maintaining a relative positional relation among the all of the rolling elements.

8. A double-row eccentric thrust bearing assembly comprising: two axially outside cases axially opposing each other and integrally interconnected; and an axially inside case interposed between these axially outside cases,

wherein three or more inner races are provided on the axially inside case on each of its opposing sides to each of the axially outside cases as separately located along a circumferential direction, whereas three or more outer races are provided on each of the two axially outside cases as separately located at positions opposite the respective inner races, the inner race and the outer race in opposing relation clamping a

rolling element therebetween, and

wherein movable ranges of the individual rolling elements between the respective pairs of the races separately disposed are all substantially equal to one another.

9. A double-row eccentric thrust bearing assembly according to Claim 8, wherein a relatively movable range provided by a gap between the axially inside case and the axially outside case substantially corresponds to the movable range of the rolling element.

10. A double-row eccentric thrust bearing assembly according to Claim 8, wherein all the inner and outer races are arranged with the same PCD and uniformly distributed along the circumferential direction.

11. A double-row eccentric thrust bearing assembly according to Claim 10, wherein all the inner and outer races have a circular shape of the same radius, and the axially outside cases and the axially inside case have annular shapes.

12. A double-row eccentric thrust bearing assembly according to Claim 8, further comprising a cage guide disposed around each of the inner and outer races.

13. A double-row eccentric thrust bearing assembly comprising:

two annular axially outside members coaxially opposing each other and integrally interconnected; and

an annular axially inside member coaxially interposed

between these two axially outside members,

each of the two axially outside members including: an annular axially outside case; and an outer race formed of an annular plate mounted to an inner side of the axially outside case,

the axially inside member including: an annular axially inside case; and an inner race formed of an annular plate radially projecting from the axially inside case,

a plurality of rolling elements clamped between either side of the inner race and a respective opposing side of the two outer races to the inner race,

the bearing assembly further comprising a rolling-element guide fixed to the axially inside member or the axially outside member and serving to limit a movable range of each of the rolling elements to a predetermined range.

14. A double-row eccentric thrust bearing assembly according to Claim 13, wherein the predetermined range limited by the rolling-element guide is a circular range of a predetermined radius.

15. A double-row eccentric thrust bearing assembly according to Claim 13, wherein a relatively movable range provided by a radial gap between the axially outside member and the axially inside member substantially corresponds to the movable range of the rolling element.

16. A double-row eccentric thrust bearing assembly according

to Claim 13, wherein the rolling-element guide has an annular shape and is formed with three or more movable-range delimiting holes arranged on the same circle with equal circumferential spacing, whereas one rolling element is disposed in each of the movable-range delimiting holes.

17. A double-row eccentric thrust bearing assembly according to Claim 13, wherein a radially movable distance of the rolling element limited by the rolling-element guide substantially corresponds to a radial width of the inner race or the outer race.

18. A double-row eccentric thrust bearing assembly comprising:

two annular axially outside members coaxially opposing each other and integrally interconnected; and

an annular axially inside member coaxially interposed between these two axially outside members,

each of the two axially outside members including: an annular axially outside case; and an outer race formed of an annular plate mounted to the axially outside case,

the axially inside member including: an annular axially inside case; and an inner race formed of an annular plate radially projecting from the axially inside case,

a plurality of rolling elements clamped between either side of the inner race and a respective opposing side of the two outer races to the inner race,

the bearing assembly wherein a relatively movable range

provided by a radial gap between the axially outside member and the axially inside member substantially corresponds to a radially movable distance of the rolling element.

19. A double-row eccentric thrust bearing assembly according to Claim 18, wherein the plural rolling elements are circumferentially arranged with equal spacing and provided with an annular cage for rollably retaining the rolling elements as maintaining the relative positional relation thereof, and wherein the radially movable distance of the rolling elements is provided by a radial gap between the cage and the axially inside member and between the cage and the axially outside member.